Jan 1st, 12:00 AM

Improving Undergraduate Instruction in Technology classes in Fashion Merchandising

Olivia Johnson
Texas State University, olivia.johnson@txstate.edu

Vertica Bhardwaj
Texas State University, v_b69@txstate.edu

Improving Undergraduate Instruction in Technology classes in Fashion Merchandising

Olivia Johnson, Vertica Bhardwaj, Texas State University- San Marcos, USA

Keywords: fashion, technology, adaptive learning

Background: As the fashion industry is being reshaped by technology-driven innovation from retailing to manufacturing to branding, it is important for Fashion Merchandising programs to offer technology based coursework that prepares students for the industry upon graduation. Although numerous fashion and retail programs offer such courses, managing technology-supported classroom is logistically difficult. Research indicates that higher education institutions continue to face issues with student engagement and learning when teaching technology and computer aided design courses (Murray and Perez, 2015). Student-driven classroom work presents a variety of challenges for the instructor, including task management, providing individual guidance to students simultaneously, and coordinating students who work at different paces. These issues are compounded when learning a new technology is involved. Moreover, instructors are challenged with delivering course content within a limited period of time. This is especially applicable to those who have a limited or no exposure to the technology and may need additional time and resources to become proficient; whereas students with previous experience are disengaged due to the slow pace of the course.

Learning a new technology or software can be daunting to many students. It is evident that learning is faculty-driven as well as self-driven that mixes various event-based activities. Face-to-face interactions and self-paced learning have been considered as best practices in narrowing the gap in student learning (Valiathan, 2002). Research also indicates that individuals who focus on "seeing" (i.e. instructions, handouts, and videos) and then "doing" instead of just "hearing" (lecture) tend to increase their proficiency in learning the topic/tool being taught (Brusilovsky, 2001). This may imply that unless there are opportunities for self-driven learning, students may not gain confidence in learning basic skill sets that are needed upon graduation. We believe that technology courses in the fashion and retail industry should address these issues through adaptive learning tools. This position paper explains and provides arguments to support our view. Our perspective is based on the cognitive load theory which is a framework of instructional design principles based on the characteristics and relations between the structures that constitute human cognitive architecture, particularly working memory and long-term memory (Wong, Leahy, Marcus, & Sweller, 2012). Mayer (2001) proposed a cognitive theory of multimedia learning (CLML), which assumes that human process pictorial and verbal materials via different sense channels (i.e., sight and hearing). Consequently, cognitive overloading could occur when learners receive redundant information, poorly structured information, or large amounts of information without a significant context.

Adaptive learning tools are technology-based, data-driven learning artifacts that interact with learners and vary presentation based upon that interaction (Murray & Perez, 2015). What makes adaptive learning systems unique, is the ability to adjust a learner's interactions and demonstrated performance level, and subsequently adapting content and resources based on those interactions. Brusilovsky (2001) noted that adaptation approaches are implemented in one of two ways: adaptive presentation and adaptive navigation. Adaptive presentation offers

personalized content for an individual student and adaptive navigation guides individuals to find the learning content by suggesting personalized learning paths. We propose that learning systems that address specific needs of fashion and retailing students be governed by the latter principle. While adaptive learning tools have gained traction in science and math, to date no tools have tackled using this technology for aiding in instruction of design software. This tool looks to fill a gap in learning and exposure to design software which may be attributed to socioeconomic disparities experienced by a large population of students. The idea is to increase "doing" in conjunction with hearing (lecture) and seeing (instruction, handouts, and videos) to increase proficiency in tools such as Adobe Illustrator, Adobe Photoshop and JDA Space Planning. Adaptive learning environments allow the learner to work hands on with a set of basic instructions and receive immediate feedback on foundational tasks. Moreover, we argue to influence students' academic progress, there should be learning in the absence of professors by creating environments that provide instruction, guidance, and outline a progression path.

From research, we determined that some adaptive technologies were more robust than others, thus finding a learning environment that fit both the financial and technological constraints of any given organization may be challenging. Yang, Hwang, and Yang (2013) found that an adaptive learning environment, which accounted for students learning styles, improved the learning achievements of the students. Moreover, they found that student's beliefs regarding their learning gains increased. Instructors should look for learning environments that make online learning more effective, engaging and efficient. Functionality such as drag and drop interactive components appeal to students needs for visual learning whereas rules based software provides more flexibility for instruction and learning. To develop new adaptive learning applications, teachers or researchers only need to transform the new learning materials into individual learning components and allow the environment to do the rest.

References

Brusilovsky, P. (2001). Adaptive educational hypermedia. In *International PEG Conference*, Vol. 10, 8-12.

Mayer, R. E. (2001). Multimedia learning. New York, NY: Cambridge University press.

Murray, M. C., & Pérez, J. (2015). *Informing and performing: A study comparing adaptive learning to traditional learning*. DigitalCommons@ Kennesaw State University.

Valiathan, P. (2002). Blended learning models. *Learning circuits*, *3*(8), 50-59.

Yang, T.-C., Hwang, G.-J., & Yang, S. J.-H. (2013). Development of an adaptive learning system with multiple perspectives based on students' learning styles and cognitive styles. Educational Technology & Society, 16 (4), 185–200.

Wang, S. L., & Wu, C. Y. (2011). Application of context-aware and personalized recommendation to implement an adaptiveubiquitous learning system. Expert Systems with Applications, 38, 10831–1083